



DEPTH OF CONSTRUCTION FOR 1 x 1.83 x 2.3 m (N x) BOX		EXIS DEPTH OF CONSTRUCTION FOR 1x1.83 RCC SLAB	
RAIL TO G	112 mm	RAIL TO FORMATION	680 mm
GR PAD	10 mm	EARTH CUSHION	304 mm
PSC SLEEPER	230 mm	THICKNESS	350 mm
BALLAST CUSHION	350 mm	CLEAR HEIGHT	2200 mm
EARTH CUSHION	789 mm	TOTAL	3534 mm
TOP SLAB	350 mm		
BOX CLEAR HT.	2300 mm		
TOTAL	4201 mm		

- MODUS OPERANDI:**
- IMPOSE SKIMP SPEED RESTRICTIONS BEFORE THE EXCAVATION WORK.
 - DIVERT OR RESTRICT THE WATER FLOW BY PROVIDING BUND ON UPSTREAM SIDE OF THE BRIDGE.
 - SHORING ARRANGEMENTS WILL BE DONE FOR PROTECTION OF BANK AND EXT. TRACK.
 - EARTHWORK EXCAVATION TO BE DONE FOR PROPOSED BARREL LENGTH OF RCC BOX.
 - IF MAXIMUM BASE PRESSURE AT FOUNDATION LEVEL IS GREATER THAN THE SAFE BEARING CAPACITY OF SOIL THEN SOIL IMPROVEMENT TO BE DONE.
 - EARTHWORK EXCAVATION TO BE DONE FOR THE PROPOSED BARREL LENGTH AND FILL WITH SAND LAYER / BOULDERS AS RECOMMENDED IN QTY. REPORT.
 - RETAINING WALL, DROP WALL, TOE WALL, STONE FLOORING WITH CM 1:3 & OTHER BRIDGE PROTECTION WORKS TO BE DONE.
 - BOULDER FILLING AND BACKFILL AS PER IRS SUBSTRUCTURE AND FOUNDATION CODE TO BE DONE.
 - COMPLETE THE REMAINING WORK IN ALL RESPECTS WITHOUT INFRINGING TRAIN TRAFFIC & RESTORE THE NORMAL SPEED IN EXG. LINE AFTER ATTAINING THE REQUIRED CONSOLIDATION IN NEW EMBANKMENTS.
 - ALSO DIVERT THE WATER THROUGH THE BRIDGE.

- SPECIFICATION:**
- ALL WORKS ARE TO BE CARRIED OUT AS PER THE FOLLOWING:
 - INDIAN RAILWAY UNIFIED STANDARD SPECIFICATIONS FOR WORKS AND MATERIALS 2019.
 - INDIAN RAILWAY BRIDGE CODE 2014 (REPRINT) & RELEVANT IS SPECIFICATIONS.
 - IRS BRIDGE SUB-STRUCTURE CODE, 2013 (2ND RVSD).
 - IRS BRIDGE RULES 2014 (REPRINT).
 - IRS SCHEDULE OF DIMENSIONS 2022(READ WITH UPDATED CORRECTION SLIP).
 - WING WALL/RETURN WALL - MASS CEMENT CONCRETE OF GRADE M35 WITH MAX. 20 MM SIZE GRADED OF APP. QUALITY.
 - COPING - CC M25 GRADE USING 20MM MAX. SIZE GRADED HARD STONE AGGREGATE OF APP. QUALITY.
 - PITCHING - DRY STONE PITCHING 230MM THICK OVER 150MM THICK SAND MIXED WITH STONE CHIPS (AS PER PARA 205 OF INDIAN RAILWAY BRIDGE MANUAL ANNEXURE 2/3).
 - LEVELLING COURSE - 150 MM THICK USING 20 MM MAX. SIZE GRADED HARD STONE AGGREGATE WITH APPROVED QUALITY.
 - WEEP HOLES - WEEP HOLES TO BE PROVIDED AS PER PARA 7.8 OF SUB STRUCTURE CODE & WEEP HOLES SHALL BE OF 75/100 DIA PVC/CIPES STAGGERED AT 1000 C/C ABOVE LOW WATER LEVEL IN BOTH WING WALL/RETURN WALL & EARTH RETAINER OF BOX.
 - LOADING STANDARD - 25 T - 2008 AXLE LOAD.
 - TOE WALL - GRADE M25 WITH DESIGN MIX.
 - GRADE OF STEEL FOR RCC IS FE 500/500D CONFORMING TO IS 1786-2008.
 - MASS CONCRETE TO BE OF M25 WITH 20MM GRADED STONE AGGREGATE FOR WEARING COURSE.
 - CONCRETE SHALL BE MECHANICALLY MIXED, VIBRATED & THOROUGHLY CURED.
 - PROVIDE SKIN REINFORCEMENT FOR WING & RETURN WALL AS PER DESIGN.
 - BAR BENDING SHALL CONFORM TO IS 2502 HIGH YIELD STRENGTH DEFORMED BARS OF GRADE FE 500 CONFORMING TO IS 1786 - 2008 SHALL BE USED AS REFORMED BARS.
 - FLOORING - ROUGH STONE FLOORING 300MM THICK WITH CM 1:3.
 - DROP WALL / CURTAIN WALL - GRADE M25 WITH DESIGN MIX.
 - WHEREVER SBC IS LESS THAN FOUNDATION PRESSURE TO IMPROVE THE SBC OF SOIL TWO LAYERS OF SAND & BOULDER FILLING OF 600MM THICKNESS EACH TO BE LAID & COMPACTED BEFORE LEVELLING COURSE OF 150MM FOR RCC BOX, RETAINING WALL FOUNDATION & APRON FLOORING.
 - GROUND IMPROVED SOIL SHALL BE OF SOIL QUALITY CLASS SQ2 & SQ3 AS PER RDSO GUIDELINES.
 - THE DIMENSION OF RETURN WALL SHOWN IN GAD ARE ONLY INDICATIVE AND TO FOLLOW AS PER APPROVAL DESIGN AND DRAWING.
 - TYPICAL COLLAR SHALL BE PROVIDED BETWEEN THE EXISTING AND PROPOSED STRUCTURE AS PER LETTER BEARING NO. SWRW.70.POLICY/2022 DATED ON 08.09.2022 ISSUED BY SWR.
 - ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COALTAR OF APPROVED QUALITY @ 1.464 KG/SQM AS MENTIONED IN RDSO DRAWING.

- NOTES:**
- ALL DIMENSIONS ARE SHOWN IN MILLIMETERS, REDUCED LEVELS ARE IN METERS & CHANGES ARE IN METERS UNLESS STATED OTHERWISE.
 - DO NOT SCALE THE DRAWING, FOLLOW FIGURED DIMENSIONS ONLY.
 - THE TYPE, DESIGN & DEPTH OF FOUNDATION SHOWN IN GAD ARE INDICATIVE ONLY. THE ACTUAL TYPE & DEPTH OF FOUNDATION WILL BE DECIDED BY THE ENGINEER-IN-CHARGE AS PER ACTUAL SOIL ENCOUNTERED AT THE SITE DURING EXECUTION.
 - SBC OF SOIL AT FOUNDATION LEVEL IS APPROX. 8.27/80M FOR RCC BOX. SOIL IMPROVEMENT TO BE DONE WITH SAND & BOULDER FILLING.
 - THE LENGTH OF FITTING FOR APPROACHES SHALL BE DECIDED BY THE ENGINEER-IN-CHARGE OF THE WORK TO SUIT SITE CONDITIONS.
 - PROVIDE WEEP HOLES WITH UP & DN LINE IS ON THE UP STREAM SIDE OF THE EXISTING BRIDGE.
 - STRUCTURAL AND DIMENSIONAL DETAILS OF OLD BRIDGE (EXG.) AS PER COMPLETION DRAWING.
 - DISMANTLING OF EXISTING PROTECTIVE PITCHING SHOULD BE DONE AS PER SITE CONDITION.
 - EXPOSURE CONDITION IS MODERATE.
 - CONTROLLED CONCRETE AS PER DESIGN MIX TO BE USED AND MIXED BY WEIGH BATCHING.
 - ON THE TOP SURFACE OF CONCRETE AT THE END OF EACH DAYS WORK DEPRESSION IN ZIG-ZAG PATTERN TO BE FORMED BY EMBEDDING WOODEN SCANTLING OR SLEEPERS TO FORM KEY FOR ADEQUATE BOND FOR THE NEXT DAYS CONCRETING.
 - ON THE NEXT WORKING DAY ALL THE LATANCE SHALL BE REMOVED BY SCRUBBING THE SURFACE WITH WIRE BRUSH WITHOUT DISLODGING THE PARTICLES OF AGGREGATE. THE SURFACE SHALL BE THOROUGHLY WETTED & CAN BE COATED WITH NEAT CEMENT GROUT BEFORE FIRST LAYER OF CONCRETE IS LAID.
 - THE BOULDER FILLING SHALL CONSISTS OF WELL-HAND-PACKED BOULDERS & COBBLES TO THICKNESS NOT LESS THAN 600 mm BEHIND THE BOULDER FILLING. BACKFILLING MATERIALS SHALL CONSIST OF GRANULAR MATERIALS OF GW, GP, SW CORRECT AS PER IS 1498 - 1970.
 - WHILE EXECUTION OF PRO. BRIDGE, EXISTING FLOOR PROTECTIVE WORKS MAY GET DAMAGED, SO TO PROTECT THE EXG. BRIDGE FROM SCOURING EFFECT FLOORING PROTECTIVE WORKS WILL BE PROVIDED.
 - SUITABLE SPEED RESTRICTIONS MAY BE IMPOSED BASED ON SITE CONDITIONS WHENEVER & WHEREVER IF IS NEEDED TO ENSURE SAFETY OF RUNNING LINE.
 - FEASIBILITY OF THIS BOX STRUCTURE AT SITE SHOULD BE ENSURED BY GMRKRIE/BSRP-CORRIDORA.
 - NECESSARY SHORING ARRANGEMENTS TO BE DONE AS PER THE SITE CONDITIONS FOR THE PROTECTION OF EXISTING BRIDGE. PROVIDED AT SITE AS PER THE APPROVED DRAWINGS, BEFORE TAKING UP DISMANTLING WORKS OF EXISTING WING WALLS.
 - THE INSTRUCTIONS CONVEYED VIDE PCE CIRCULAR NO.01 / 2015 DT-09-03-15, REGARDING WORK DISCIPLINE AT SITE AND AS PER PCE CIRCULAR NO.01/2021 DATED: 22.06.2021 REGARDING ENSURING QUALITY OF WORK AND MAINTAINING SITE RECORDS IN WORKS CONTRACTS TO BE STRICTLY FOLLOWED.
 - IT IS TO BE ENSURED BY GMRKRIE/BSRP-CORRIDORA (ENGINEER-IN-CHARGE) BEFORE EXECUTION, THAT THE MAXIMUM BASE PRESSURE AT FOUNDATION LEVEL FOR EACH ELEMENT OF BRIDGE IS LESS THAN THE SAFE BEARING CAPACITY OF SOIL AT THAT LOCATION.
 - ENGINEER-IN-CHARGE SHALL ENSURE THAT AFTER SOIL IMPROVEMENT SBC OF THE SOIL BELOW THE BOX SHALL BE MORE THAN 18.0T/SQM.
 - ENGINEER-IN-CHARGE SHALL ENSURE THAT LEVEL OF THE FOUNDATION OF DROP WALL, CURTAIN WALL AND RETAINING WALL SHALL BE SUFFICIENTLY LOWER LEVEL THAN THE REQUIRED CALCULATED SCOUR LEVEL.
 - THE THICKNESS OF BOULDERS AND SAND FILLING SHALL BE CONFIRMED BY THE ENGINEER-IN-CHARGE AT THE SITE AFTER CONDUCTING A PLATE LOAD TEST AND SHOULD SATISFY THE DESIGN SBC VALUE SHOWN IN THE DRAWING.
 - ENGINEER-IN-CHARGE SHOULD ENSURE THAT SUITABILITY OF THE EXISTING BRIDGE TO TAKE CARE OF 25T LOAD DISPERSION FOR ITS ELEMENTS SUCH AS SUBSTRUCTURE AND FOUNDATION BEFORE TAKING UP PROPOSAL WORK.

- REFERENCE:**
- RCC BOX SIMILAR TO DRG NO. RDSOB-101552 & RDSOB-101552 (SIZE 2.00 X 2.50M, FILL-1.0M).
 - RETAINING WALL REFER DRAWING NO-024008-BSRP-CRA-C-AG-ERS-20-6001.
 - WEEP HOLES AS PER PARA 7.8 OF SUB-STRUCTURE CODE.
 - BALLAST RETAINER AS PER DESIGN MONOLITHIC WITH THE BOX.
 - REFER DRAWING NO-024008-BSRP-CRA-C-AG-ERS-10-4005.
 - BACKFILL MATERIAL BEHIND RCC BOX TO PROVIDE AS PER PARA 7.5 OF IRS BRIDGE SUBSTRUCTURE FOUNDATION CODE.
 - SHORING ARRANGEMENT ARE AS PER DESIGN AS PER SITE REQUIREMENT.
 - DETAILS OF EXISTING STRUCTURE SHOWN ARE AS PER IR COMPLETION DRAWING.
 - FOR FENCING AND CABLE TRAY REFER SEPARATE DRAWING.

BASE PRESSURE AT FOUNDATION LEVEL

STRUCTURE	MAX.
RCC BOX (1M2)	18.0
RETAINING WALL (1M2) AS PER DESIGN	

ABBREVIATIONS

CL	- CENTER LINE
TYP	- TYPICAL
THK.	- THICKNESS
US	- UP STREAM SIDE
DS	- DOWN STREAM SIDE
DN	- DOWN
BR	- BRIDGE
FL	- FORMATION LEVEL
PRO.	- PROPOSED
EXG.	- EXISTING

LOADING STANDARD
A) PRO BRIDGE 25T AXLE LOAD 2008 SWR

LEGEND:
Total Barrel length of MIB 522 = 12m
Completed Barrel length = 0m
Remaining Barrel length = 12m

CONCEPTUAL / TENDER DRAWING

GENERAL CONSULTANTS:
EGIS-AECOM-WSP

RAIL INFRASTRUCTURE DEVELOPMENT
COMPANY (KARNATAKA) LIMITED

BENGALURU DIVISION
BAIYAPPANAHALLI - RAJANUKUNTE SECTION OF BSRP C-4

PROPOSED MINOR BRIDGE NO.522 AT BSRP CH-33+738
AS 1X1.5X1.65m RCC BOX(CAST-IN-SITU) ON UP STREAM SIDE OF THE
BETWEEN CHANNASANDRA AND JAKKUR STATIONS.

GC/K-RIDE	K-RIDE
FOR GC	FOR K-RIDE

AUTHORITY OF WORK:
AS PER BSRP DFSR

DRG.NO:
K.RIDE DRG.NO: KRIDE/BSRP/C-4/PKG2/MIB-522

HQ.DRG.NO:

SCALE - 1 : 100